



Vermont Vegetable and Berry News –May 22, 2018

compiled by Vern Grubinger, University of Vermont Extension

(802) 257-7967 ext. 303, vernon.grubinger@uvm.edu

www.uvm.edu/vtvegandberry

HIGH TUNNEL WORKSHOP MAY 30, 4-6:30 PM

Join Andy Jones and Jill Rotondo of Intervale Community Farm in Burlington as they describe vegetable production in their 30,000 sq. ft. of unheated tunnels, with a focus on tomato and cucumber production. ICF grows summer and winter vegetables in tunnels to provide fresh produce to their CSA members throughout the year. They will discuss soil fertility, crop management, insect and disease control, irrigation, and other topics of interest such as use of screening to exclude cucumber beetles. Cheryl Frank Sullivan of the UVM Entomology lab will explain scouting for pests, and timing and selection of beneficial insects to manage aphids, whiteflies, and thrips. Ann Hazelrigg of the UVM Plant Diagnostic Clinic will describe tunnel diseases to watch for, and how to manage them.

Directions: 281 Intervale Road, Burlington (note: doesn't show up on Google maps well). Take first driveway on the left after pavement runs out. Park in grass lot; tunnels are through the gate on the opposite side of the road, veer left toward construction site and tunnels.

REPORTS FROM THE FIELD

(Huntington) Incorporating winter-killed cover crops has been a minor pain, given the huge growth put on last fall and the late start this spring. I failed to mow any last November, so this is the first spring I've moldboarded a dead oat/pea cover just to deal with the biomass. Despite the late start we are pretty much caught up with tillage, mulch laying, and planting, thanks to the relatively low rainfall totals of the last 3 weeks and abundant sun and wind. The forecast is looking to more-or-less continue this excellent weather pattern so I'm looking forward to forgetting about April.

(Westminster West) A tough spring by any definition, but we see warmer better days ahead! Tough starts bring out the resilience in growers and staff. We didn't suffer structural damage from wind storms but went 36 hours without power and lost numerous flats of herbs. Probably lost as much this spring to mice and finally a woodchuck that burrowed into a greenhouse to munch down hundreds of lettuce plants!

Insects: I have yet to see one whitefly this season. Our bio-controls are on target, except for aphids, which have been unusually hard to control with bio controls this season, wonder how other growers are faring?

Garlic crop is looking excellent, very low winter loss this year, under 3 percent, which I attribute to use of *Bacillus subtilis* (Ceases) in the water wheel at planting time last fall, also ran it thru drip lines at emergence this spring. I now add it to all my field transplanting water and will follow up in drips monthly on all alliums. Onions are set out on white plastic for the early Walla Walla and black for the rest of crop, those are looking good.

April sales were way down; May is looking good though. Happy I've cut down on several field crops and focusing on the more profitable ones, might make my season a bit more manageable. We plan for so many scenarios during the growing season and I thought I've seen everything but I wasn't prepared to have one of our drivers arrested for DWI while delivering a truckload of plants in another state. We usually check references but I never did; a simple google search would have shown us what we were dealing with, so fair warning to all, due diligence!

(Craftsbury) The spring rush to prepare the blueberry bushes has been met successfully. We did a field-wide pruning, removing many mature canes and the annual push back of witches' broom. We also removed the alternate host, balsam, growing in the vicinity. We put fertilizer around each plant.

On two successive Saturdays we hosted a total of 50 volunteers to pull branches and canes from pruning off the hill and on the second Saturday to mulch the entire crop. We organized 5 tractors and trailers, a loader and two dozen shovelers and finished the job in 3 and 1/2 hours. The day was mild, sunny and perfect. We worked amidst budding bushes and beautiful views of the Black River Valley. The tradition of a Mulching Bee dates back over 25 years when our father, then the recently retired minister of the Church on the Common, recruited the deacons, trustees and parishioners to help us get this hard spring task behind us. Now we hope for the best, and mow and mow.

(Orwell) Such a sweet relief to have spring fully upon us. Crops are growing beautifully in hoopouses. We re-covered a ridge vent Harnois house last week and vowed that next time we will use a lift to quickly cover it with just a few hands on deck. Nerve racking to not have it 100% secured the day after we covered it and winds picked up again. I also vowed that my retirement will involve not hearing flapping plastic at night.

Second year in a row we had some minor damage on early planted tomatoes when the growing points totally wilted on the first sunny days. It's as if the roots weren't active enough to match the sudden demands of photosynthesis. Cold well water (not tempered)? Nitrogen not mineralizing rapidly enough? A little nerve racking but after a week or so, the plants looked great.

Our fields have quickly shifted from gooey impossible clay to concrete impossible clay. Hard to figure out when the best timing is to prep and plant and not beat up the soil too badly.

(Salisbury NH) Fields are very dry. Rain this weekend was much needed. Have been picking lots of asparagus. We have a problem every year early in spring when there are so few things to sell. Some customers know to check in anyway - even without the "open" flag. Hoophouse spinach is starting to bolt and field spinach is not ready yet. There's always a gap. Doing the yearly vows of keeping up with weeds. Bought a Yang JP1 and will be learning the tricks of that.

(Plainfield NH) Much irrigating was done on our sandy soils last week, so this past weekend's rain was much needed, a gentle soaker. Planting going nicely. Greenhouse ornamental sales are good. Hooped and row covered most everything that might have frosted last week. We need to start cultivating in earnest this week. Also need to re-spray the strawberries as we are a bit beyond 10% bloom and not sure even with the sticker whether any disease control is left. A tiny bit of leaf spot is showing, we will target that next time through the field.

In the blueberries we are spraying for a nasty bit of anthracnose we neglected over the years until it developed to a point where we couldn't ignore it. Vigor of the plants is not where I would like to see it; I will try some foliar feeding. No cucumber beetles in the cuke houses yet, which surprises me but I suspect they will appear out of nowhere as they always do. Spraying weekly for PM in the tomato houses, so far it's under control, which is not to be confused with eradicated. I suspect we are on a 10-day schedule with this for the duration of the summer.

Interesting that the college kids who were dying to work here during the summer seem to be finding more interesting things to do. Two individuals who sought us out in the winter quit last week after interviewing, providing references, and committing. They never made the first day, One said they decided to take the summer off and live at home. The field crew continues to be stretched and the average age for workers here creeps skyward as our four Jamaican guys are all pretty close to 60 and the tractor operators are 67 and 87.

(Little Compton RI) We bought a used greenhouse 30 years back and kept the old wiring. Recently a fan motor burned out so we replaced it but it ran for 3 seconds and shut off. We returned the motor for another one but no luck. An electrician tested the draw through the old wire and found the volts were half what they should be and amps were twice what they should be! Turns out the wire coating in hot greenhouses eventually breaks down and cracks, so stray electrical current crosses between wires! We rewired the whole run from the electrical box. Problem solved. Another lesson learned is to replace main breakers on sub-panels every 10 to 15 years. After a lot of use they weaken and crap out on a hot sunny day when you need them most. Also, never put both vent fans on the same breaker. If that breaker fails, you can cook your greenhouse!

Wet and cool in this corner of New England. Flea beetles as bad as ever, and they are why we stopped growing April/early May broccoli and leafy greens. Now growing arugula in a high tunnel, which we will follow with second melon planting. Deer population did well this winter and we are digging in for battle this season. We continue to fight powdery mildew on grafted tomatoes brought in from out of state.

Our first FSMA inspection happens next week. We are the first farm in the state to get one; just a drive by look-see. Kind of curious how their understanding of the rules will match our level of understanding and commitment to compliance.

MANAGING POWDERY MILDEW IN TUNNELS AND GREENHOUSES

Meg McGrath, Cornell Cooperative Extension

Fungicides are the primary management tool for managing powdery mildew, the most common disease in high tunnel and greenhouse tomatoes. Micronized sulfur (e.g. Microthiol Dispers) and mineral oil (JMS Stylet-oil) are the most effective products for organic production based on comments from growers. They are also good choices for conventionally-produced crops.

Sulfur is recommended applied at its lowest label rate because plants grown in protected culture tend to be more sensitive to phytotoxicity than field-grown plants. Also, without rain or overhead irrigation, fungicide residue will remain longer on plant tissue. As stated on the labels for these fungicides, there needs to be a gap of 2 or 3 weeks between applications of these products because oil can move sulfur into the leaf resulting in damage. Applications of sulfur especially during the harvest period may leave visible residue on fruit. It can be easily wiped off. An option to minimize visible residue is to use sulfur for the first applications until fruit start to mature, switch to another product for an application or two, then start applying oil.

Other organic-approved products that are not oils include MilStop, Cease (these 2 recommended used together), Double Nickel, and Regalia. Conventional fungicides labeled for powdery mildew and permitted used in protected culture include Inspire Super, Revus Top and Vivando.

Cultural practices to add to the powdery mildew management program include using wide in-row and between-row spacing of plants, and removing lower leaves. These will help reduce humidity and also improve spray coverage. Also, promote air movement to reduce humidity by opening sides or vents on warm days and using fans. These practices will help manage other foliar diseases including Botrytis gray mold and leaf mold.

USING B.t. FOR COLORADO POTATO BEETLE CONTROL

Including the bio-insecticide B.t. as part of your CPB management strategy is important for avoiding CPB resistance to other types of insecticides, including spinosad (Entrust). Trident is a relatively new B.t. that is OMRI approved for organic farms. However, it is only effective on very small larvae that are less than ¼-inch long.

I suggest you scout early-season potatoes and eggplant frequently for CPB egg masses, flag a dozen or so masses, and monitor them for hatch. Initiate Trident application as soon as eggs begin to hatch. The small larvae grow very fast when it is warm, thus you can easily miss the window for B.t. effectiveness.

Trident attacks the larval gut and must be ingested by the insect to be effective. Therefore thorough plant coverage is essential for good results. After eating Trident, larvae stop feeding within a few hours and die within 2-4 days. During periods of heavy infestation and extended egg hatch, reapply every 4-5 days. Application rate is 3-6 quarts/acre. If infestation consists mainly of older, larger larvae and adults, use a contact insecticide with knockdown activity that is labeled for CPB, such as Entrust. Trident is available in VT from Crop Production Services in Addison VT. Cost is \$32.65/gallon, delivered.

UPDATE FROM THE UVM PLANT DIAGNOSTIC CLINIC

Ann Hazelrigg

For the most part, the pictures and samples coming into the Clinic now are abiotic problems. Lots of edema in tomato, and some cold injury. Always check the new growth to see if it looks good compared with the damaged tissue, that suggests an environmental event leading to abiotic injury. Also, always check for roots rots when you are seeing issues with transplants. We have seen some suspected nutritional deficiencies in various crops, Mg, N, etc. It may just be the cold soils slowing uptake or it could be a true soil deficiency.

Tomato edema in tomato (on stems, petioles and leaf veins) looks bad, but plants will grow out of it. We should be past the time this usually occurs, late winter/early spring, with cool, cloudy days. See: <https://ag.umass.edu/greenhouse-floriculture/photos/tomato-plant-intumescence>

Bacterial canker diagnosed on tomato plants just beginning to fruit. This disease is very destructive and can cause cankers, wilting and death. Seems like it shows up when the plants are starting to get stressed from bearing fruit. See: <https://ag.umass.edu/greenhouse-floriculture/photos/greenhouse-tomato-bacterial-canker>

If you suspect it, skin away the top tissue on the stem to see if there is browning in the water conducting cells. We also have the rapid assay test strips if you want confirmation. If you suspect or have the disease, don't move workers/pruners from house to house, and remove suspect plants asap at the soil line. According to Meg McGrath at Cornell, the bacterium can overwinter up to 3 years in stems.

Powdery mildew diagnosed on a few transplants from various farms. Rhizoctonia stem rot suspected causing constrictions at the base of plants. This disease usually is hit or miss and is related to cool wet soils.

Cold injury noted in some peppers. New growth was good and green, old foliage was speckled and brown. Anytime I see leaf spots and there is a CLEAR delineation between healthy green and brown dead with no advancing yellow margin, I suspect some kind of abiotic issue. Mg deficiency suspected in peppers. This shows up as green veins with yellowing between the veins. Vern suggested dissolving 2 lbs Epsom salts/100 gal and watering it in several times.

Sometimes we can diagnose problems with a picture so try that first; send one at a time to ann.hazelrigg@uvm.edu. Otherwise, send a physical sample (including roots if possible) to the UVM Plant Diagnostic Clinic at Jeffords Hall, 63 Carrigan Drive, Burlington, 05405

NUTRIENT MANAGEMENT UPDATE

As June approaches, consider taking a presidress nitrate test (PSNT) from fields that have your most valuable cash crops planted. The tests costs \$9 from the UVM soil test lab and will offer a “snap shot” of how much N is available at that moment, guiding your sidedress applications as well as better understanding overall N management. You can also efficiently cycle nutrients and build organic matter with mid-season cover crops like sorghum sudangrass or Japanese millet.

For ideas on cover crop innovation check out presentations from the 2017 NEVFC, scroll down to “cover crops” at:

<https://newenglandvfc.org/past-conference-proceedings-presentations/2017-proceedings-and-presentations>

Nutrient management templates, lists of fertilizer suppliers and other resources are at:

<http://www.uvm.edu/vtvegandberry/NMPlinks.html>.

Contact Becky Maden from UVM Extension for support with nutrient management or cover cropping this season: rebecca.maden@uvm.edu

TECHNICAL TIP

“Floor Design for Vegetable Wash, Pack and Storage Areas” is a new blog post by UVM Extension ag engineers Chris Callahan and Andy Chamberlain. <http://go.uvm.edu/floors>